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TITLE: METHOD AND DEVICE FOR CHEMICAL DECONTAMINATION

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ABSTRACT:

PROBLEM TO BE SOLVED: To make it possible to reduce the volume of secondary wastes while maintaining the performance of decontamination by using a reducing organic acid and a mixture of its salts and by conducting reductive dissolution while controlling the hydrogen ion concentration of a decontaminating liquid.

SOLUTION: An oxide film on an object to be decontaminated such as a nuclear power plant, for example, is reduced and dissolved by a decontaminating liquid containing an organic acid/organic acid salt (for example, oxalic acid/oxalate) as a reducer. In this process, the pH of the decontaminating liquid is controlled to 2.8 to 3.3, for example. The addition of a heterocyclic compound such as a crown ether group improves the performance of decontamination. Metals eluting in the decontaminating liquid are recovered by an ion exchange resin and the like, and an excessive reducer is decomposed by ultraviolet-light irradiation. An oxide film such as of a chrome component remaining in the object is removed by an oxidation treatment using permanganic acid ions and the like. The decontaminating process mentioned above is repeated as occasion requires. As the control of the hydrogen ion concentration decreases eluting metals, the volume of secondary wastes can be reduced.

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